

HOLOGRAPHIC STORAGE SYSTEM

ABSTRACT OF THE DISCLOSURE

The present invention includes an optical system to control and optimize molecular reorientation for information storage. A preferred embodiment of the invention utilizes light sources emitting at wavelengths centered on or around the absorption bands of the storage medium. The light can be selectively polarized to control orientation of molecular components of organic material to provide non-volatile storage of large amounts of information. This provides an alternative to magnetic, electric, magneto-optical, or electro-optical methods which are complex and expensive. The all-optical holographic method in accordance with the present invention provides a storage system with extremely high memory capacity. In accordance with another aspect of the present invention, a system for optically storing and retrieving data includes optically recording (writing) and retrieving (reading) with the same wavelength beam, for example, without additional conditions such as an electric or magnetic field.

15